

REMARKS

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

I. Claim Status and Amendments

Claims 1-16 were pending in this application when last examined and stand rejected.

Claims 7-12 were withdrawn as non-elected subject matter.

Claims 1-6 and 13-16 were examined on the merits and stand rejected.

Applicants have amended claim 1-6 in a non-narrowing manner to make minor editorial revisions to better conform to U.S. claim form and practice. Such revisions are non-substantive and not intended to narrow the scope of protection. Such revisions include: replacing the "characterized by" language with "wherein"; revising the beginning of the claims to recite "A" or "The"; and revising the claim language to provide proper antecedent basis throughout the claims.

Claims 13-16 are amended to proper method claims. Support can be found in original claims 13-16.

New dependent claim 17 has been added that is directed to the "such as" language removed from claim 16 to which it now depends.

New independent claim 18 has been added that corresponds to claim 1, but is in "consisting essentially of" format.

No new matter has been added by the above claim amendments.

Claims 1-18 are pending upon entry of this amendment.

II. Indefiniteness Rejection and Rejection under 35 USC 101

Claims 13-16 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite and under 35 U.S.C. § 101 as being improper method claims for the reasons on pages 2-3 of the Office Action.

The present amendment overcomes the rejections by amending the claims to proper method claims. The claims are thus clear and definite and contain proper method steps. The rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

III. Prior Art Rejections

Claims 1, 3-6, and 13-16 were rejected under 35 U.S.C. § 103(a) as obvious over SCHASTEEN (US 2004/0175434A1), RACZEK (US 6,787,166), and BLAND (US 2002/0009527A1) for the reasons on pages 4-8 of the Office Action.

Claim 2 was rejected under 35 U.S.C. § 103(a) as obvious over SCHASTEEN, RACZEK, and BLAND, and further in view of CAMPBELL (US 5,229,118) for the reasons on pages 8-9.

These rejections are respectfully traversed and will be discussed together below, since SCHASTEEN, RACZEK, and BLAND are used in each rejection.

The rejections should fall, because the combined cited prior art references fail to teach, suggest or make obvious all of the limitations of independent claim 1 and new claim 18, as required to support a *prima facie* case of obviousness.

Independent claim 1, as amended, calls recites:

"An animal growth promoting composition, comprising:

1.1 to 5% by weight of a sorbic acid or a sorbate calculated as sorbic acid,

45 to 93.9% by weight of formic acid, and

5 to 50% by weight of propionic acid,

in a liquid solution."

This composition, which comprises the three organic acids, may additionally contain water (claim 5). The composition of new claim 18 corresponds to claim 1, but is in "consisting essentially of" format.

The objective of claim 1 is to provide an animal growth composition which is free from antibiotics and which is in liquid state. One aspect the invention of claim 1 is based on the surprising discovery that the poor solubility of sorbic

acid/sorbate in formic acid could be solved by introducing propionic acid and thereby providing an efficient and economically feasible growth promoter in liquid form. See page 3 lines 17-31 of the disclosure.

SCHASTEEN (US 2004/0175434A1)

The main reference of SCHASTEEN discloses antimicrobial compositions comprising a compound of formula I and one or more other organic acids. See claim 1 of SCHASTEEN. Claim 3 of SCHASTEEN includes a long list of organic acids, wherein one is sorbic acid. However, it should be noted that none of the specifically disclosed compositions of this reference includes sorbic acid. On page 5 of the Official Action, the Examiner refers to some specific compositions disclosed in e.g. paragraph [0593] comprising

5-20% 2-hydroxy-4-(methylthio)butanoic acid (HMBA),
65-85% formic acid,
1-15% propionic acid, and
5-20% phosphoric acid.

The HMBA has a dual function in that it first reduces the growth of mold and bacteria in animal feed. Second, it is a source of the supplemental amino acid methionine (paragraphs [0013], [0019 and [0563].

It is respectfully submitted that SCHASTEEN fails to disclose or suggest the compositions comprising the three organic acids of sorbic acid (or a sorbate calculated as sorbic acid),

formic acid, and propionic acid in the amounts recited in claim 1. Further, as explained above, claim 1 of the present application is focused on compositions comprising the three specified organic acids in the amounts recited in the claims, and which do not contain the additional agents disclosed in SCHASTEEN. See also new claim 18, which corresponds to claim 1, but is in "consisting essentially of" format and therefore excludes the extra ingredients of SCHASTEEN.

For these reasons, the teachings of SCHASTEEN fail to disclose or suggest each and every element of the composition of independent claim 1. Thus, claim 1 and all claims dependent thereon are believed to be novel and patentable over SCHASTEEN.

RACZEK (US 6,787,166)

The second cited reference of RACZEK fails to remedy the above-noted deficiencies of SCHASTEEN. RACZEK relates to a solid acid preparation for use in animal feed. The preparation in RACZEK comprises:

- sorbic acid,
- at least one liquid acid (such as propionic, acetic, lactic, valeric, formic, isobutyric, trimethylacetic, 2-methylbutyric, hexanoic, butyric, phosphoric, hydrochloric or sulphuric acid), and
- at least one other solid organic acid (such as fumaric, tartaric acid etc.) (claims 1, 6 and 8).

The amount of sorbic acid is 10-60% and most preferably 30-40% (claim 4 and column 3, lines 6-8). According to RACZEK, the preparation preferably contains a porous carrier (column 3, lines 16-17) and the preparations are produced by first mixing the liquid acid with the carrier and then adding the sorbic acid and the solid organic acid (column 3, lines 46-51).

This teaching in RACZEK stands in contrast to the composition of claim 1 of the instant application. In particular, contrary to the present invention, the compositions of RACZEK are solid preparations, whereas the composition of the instant application is "in a liquid solution" as recited in claim 1.

Additionally, the three component composition in the amounts recited in claim 1 of the present case is not specifically disclosed or suggested in RACZEK.

Furthermore, the amount of sorbic acid in the composition of RACZEK is much higher compared to claim 1 of the present application. The Official Action refers to the description of the prior art in RACZEK, wherein it is stated that sorbic acid at high concentration (1.8-2.4% based on the feed) has a high nutritional activity for growing piglets (Kirchgessner et al. 1995) (column 1, lines 56-57). It should be noted that the Kirchgessner et al. document is also discussed in the present application on page 1. However, in contrast to the teaching in RACZEK, the composition of the present application uses very small amounts of sorbic acid/sorbate. See, for instance, Example

14 of the present application, wherein the amount of the composition of the present application (typically containing about 2.5% and at most 5% sorbic acid) was 8g/kg feed or 6g/kg feed. Thus, the amount of sorbic acid is at most about 0.05% based on the feed. The difference in view of Kirchgessner et al. is remarkable and RACZEK. Nothing in RACZEK discloses or suggests this small amount of sorbic acid/sorbate as recited in the claims.

Indeed, it could be said that RACZEK teaches away from using the small amount of sorbic acid/sorbate as recited in the claims. It is well established that a prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 2141.02, VI. References cannot be combined where the reference teaches away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983). A prior art reference that "teaches away" from the claimed invention is a significant factor to be considered in determining obviousness. Also, proceeding contrary to accepted wisdom is evidence of nonobviousness. M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 2145, X, D, 1-3.

For these reasons, the combination of RACZEK with SCHASTEEN fails to arrive at the composition of independent claim 1.

BLAND (US 2002/0009527A1)

The third cited reference of BLAND fails to remedy the above-noted deficiencies of SCHASTEEN and RACZEK. BLAND discloses an animal feed comprising hydrolysable formaldehyde adduct and 1-20% water (see claim 1 of BLAND). The animal feed can additionally contain a C₁-C₈-carboxylic acid (such as formic acid, acetic acid, propionic acid, benzoic acid, sorbic acid, lactic acid etc.) (see claims 2 and 3 of BLAND). The acids can be in the form of a salt such as ammonium salt (paragraph [0039]). BLAND was cited against present claims 4 and 5, which specify that the formic acid is partly neutralized with ammonia and/or contains water.

However, the three component composition in the amounts recited in claim 1 of the present case is not specifically disclosed or suggested in BLAND.

For these reasons, the combination of SCHASTEEN, RACZEK, and BLAND fails to arrive at the composition of independent claim 1. Thus, it is believed that claim 1 and all claims dependent thereon are novel and patentable over the combination of SCHASTEEN, RACZEK, and BLAND.

CAMPBELL (US 5,229,118)

The Official Action relied on CAMPBELL in combination with SCHASTEEN, RACZEK, and BLAND to reject claim 2.

However, the forth cited reference of CAMPBELL fails to remedy the above-noted deficiencies of SCHASTEEN, RACZEK, and BLAND. CAMPBELL discloses a seaweed-containing additive for animal feed (column 3, lines 1-2) which besides a number of other components may contain a sorbate compound (column 3, line 10). Example II in CAMPBELL describes the preparation of an aqueous composition containing a small amount of potassium sorbate (at most 0.3%). CAMPBELL is cited merely against claim 2 specifying that the sorbate is potassium sorbate.

Based on these references the Official Action contends that it would have been obvious to combine the teachings of these references to produce a liquid composition to be added to feed for promoting animal growth.

Applicants respectfully disagree. It is submitted that based on the above-discussed teachings of the cited references, one of ordinary skill in the art would not arrive at the composition of claim 1 with the specific three acids in the specified amounts without improper hindsight consideration.

Starting from SCHASTEEN, one of ordinary skill in the art would not combine the same with RACZE, because RACZEK teach solid formulations. In addition, if SCHASTEEN were combined with RACZEK, the skilled artisan would choose the high concentration

of sorbic acid (10-60%) disclosed RACZEK. Furthermore, even if skilled artisan combined SCHASTEEN and RACZEK, they would, at the best, end up with a composition comprising a compound of formula I and sorbic acid (10-60%) and optionally one or more of the additional organic acids listed in claim 3 of SCHASTEEN, which is not the claimed composition.

Moreover, there is no incentive or suggestion in SCHASTEEN and RACZEK or in the Official Action to motivate the skilled artisan to select among the several organic acids disclosed in the references, a combination of formic acid and propionic acid, let alone select the same in the amounts specified in present claim 1.

Furthermore, as discussed above, the references cannot be combined to arrive at the claimed composition, because RACZEK teaches away from the concept of present invention for using a small amount of sorbic acid/sorbate as recited in the claims.

For these reasons, claim 1 is believed to be non-obvious over SCHASTEEN and RACZEK. It is to references of SCHASTEEN and RACZEK that the rejections should fall. The remaining two other cited references of BLAND and CAMPBELL (were relied upon for the features of claims 2, 4 and 5) are not pertinent to the features of claim 1.

Thus, the combination of SCHASTEEN, RACZEK, and BLAND and the combination of SCHASTEEN, RACZEK, BLAND, and CAMPBELL are not predictive of, and in fact, fail to arrive at each every

feature of claim 1. Thus, it is believed that claim 1 and all claims dependent thereon are novel and patentable over the combination of SCHASTEEN, RACZEK, and BLAND and CAMPBELL.

Further, it should be noted that the composition of new claim 18 corresponds to claim 1, but is in "consisting essentially of" format and therefore excludes any additional ingredients of the cited references. Thus, claim 18 is also novel and patentable over the combination of SCHASTEEN, RACZEK, and BLAND.

In addition, it is believed that the claimed composition exhibits an excellent growth promoting effect of the three component composition of the present invention (SFP) compared to an antibiotic feed additive (Avilamycin) and formic acid feed additive (F) as set forth in Table 6 of Example 14 of the present application. It is believed that this excellent growth promoting effect of the claimed composition constitutes surprising and unexpected properties over the teachings of the cited references. It is well established that the presence of surprising and unexpected results are evidence of nonobviousness. M.P.E.P., Eighth Ed., Rev. 6 (September 2007) at § 716.02(a) I-IV and § 2145.

For this additional reason, it is believed that the composition of claim 1 and all claims dependent thereon are non-obvious over the combination of SCHASTEEN, RACZEK, and BLAND and CAMPBELL.

Thus, the above-noted obviousness rejection over the combination of SCHASTEEN, RACZEK, and BLAND is untenable and should be withdrawn.

VI. Conclusion

Having addressed all the outstanding issues, the amendment is believed to be fully responsive. In view of the above, it is respectfully submitted that the application is in condition for allowance and notice to that effect is hereby requested. If the Examiner has any comments or proposals for expediting prosecution, please contact the undersigned attorney at the telephone number below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON

/Jay F. Williams/
Jay F. Williams, Reg. No. 48,036
209 Madison Street
Suite 500
Alexandria, VA 22314
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

JFW/ml